El Niño Fact Sheet for Southeast California & South-central Arizona

WFO Phoenix, AZ

Issued: February 20, 2007

Overview

The term El Niño refers to the large-scale ocean-atmosphere climate phenomenon linked to a periodic warming in sea surface temperatures across the central and east-central equatorial Pacific Ocean. El Niño represents the warm phase of the El Niño/Southern Oscillation, or ENSO, cycle. Recent data show that the El Niño conditions of the past five months are rapidly weakening. The data also suggest ENSO-neutral conditions may develop by this spring, and La Niña conditions may exist during the last half of 2007.

Past and Current Conditions

Sea surface temperatures (SSTs) along the equator in the Pacific Ocean have quickly cooled over the past month (figs. 1 and 2), and are now below the 0.5 °C threshold that defines El Niño conditions (fig. 3). In essence, this El Niño episode is rapidly coming to an end.

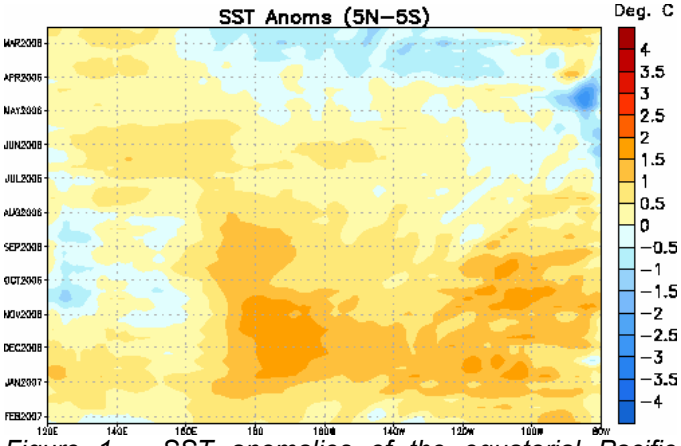

Figure 1 – SST anomalies of the equatorial Pacific Ocean waters, from mid-February 2006 (top) through mid-February 2007 (bottom). Note the darker orange colors (indicating El Niño conditions) which developed during the fall of 2006, have recently disappeared.

Atmospheric circulation features typically related to El Niño episodes have not developed over the tropical Pacific Ocean this winter, due primarily to "a lack of persistent clouds and precipitation over the anomalously warm water of the central equatorial Pacific" (Source: CPC ENSO Briefing, 12 Feb. 2007). As a result, the impact of El Niño on the atmospheric circulation pattern at higher latitudes, including over North America, has been minimal thus far this winter.

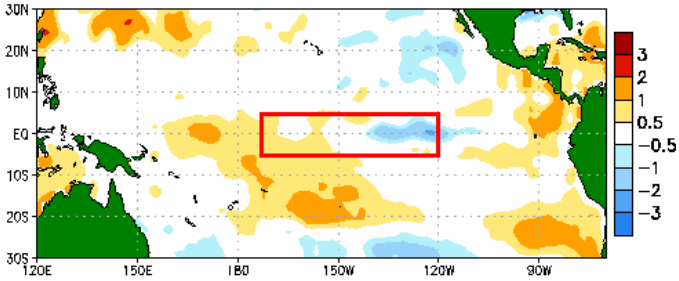

Figure 2 – Weekly SST anomalies in the Pacific Ocean, centered on February 14, 2007. The red box represents the Niño 3.4 region.

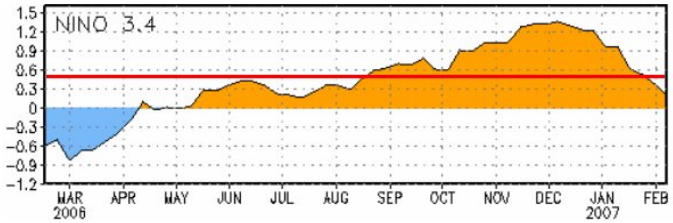

Figure 3 – SST anomalies in the Niño 3.4 region since early 2006. SST anomalies above 0.5 ºC (red line) indicate El Niño conditions. The anomalies have recently fallen below this level.

The most recent Oceanic Niño Index (ONI), a three-month average of SST anomalies in the Niño 3.4 region computed for the period November 2006-January 2007, was 1.1 °C. A warm (El Niño) episode is said to have occurred when the ONI is at-or-above 0.5 °C for five consecutive months; thus far, the ONI has been at-or-above 0.5 °C for four consecutive months. Despite declining SSTs in the Niño 3.4 region during February, the ONI for December-February will likely remain above 0.5 °C, making this event a warm (El Niño) episode.

Outlook

Based on recent trends and a majority of the statistical and coupled model forecasts, SST anomalies across the Niño 3.4 region will continue to cool through the next several months, with ENSO-neutral conditions likely this spring and La Niña conditions possible during the last half of 2007 (fig. 4).

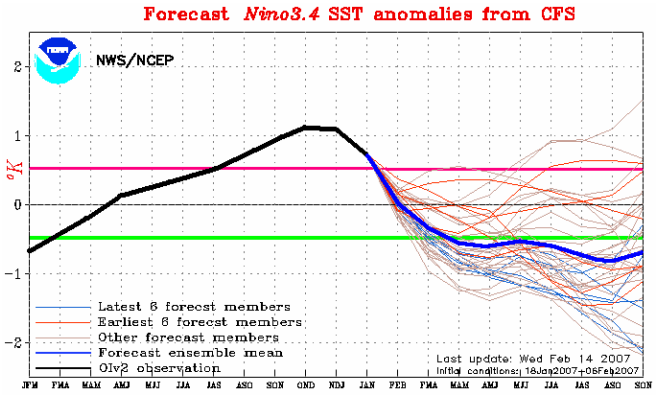

Figure 4 – Forecasted SST anomalies from the NOAA CPC CFS model. The heavy black line is observed SST anomalies, the heavy blue line the average of all the model runs, and the light blue lines the most recent model runs. The magenta line indicates the 0.5 °C threshold for El Niño conditions. The green line indicates the -0.5 °C threshold for La Niña conditions. Note that a sharp decrease in SST anomalies is forecast during the next several months.

Although it is still possible this El Niño event could enhance precipitation chances over the southwest United States during the next couple of months, NOAA's Climate Prediction Center (CPC) now indicates that is not likely to occur.

The official March outlook from CPC calls for equal to slightly increased chances for above normal temperatures, with near or below normal precipitation across southwest/south-central Arizona and far southeast California (figs. 5 and 6).

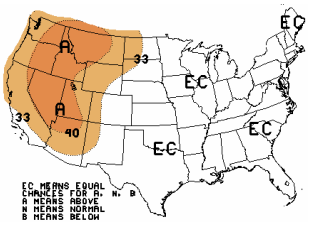

Figure 5 – March Temperature Outlook.

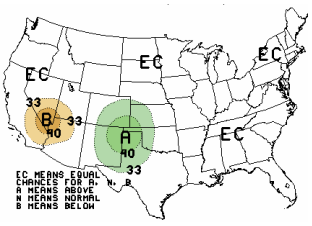

Figure 6 – March Precipitation Outlook.

The official March-April-May (MAM) outlook from CPC calls for increased chances for above normal temperatures, with near or below normal precipitation across southwest/south-central Arizona and far southeast California (figs. 7 and 8).

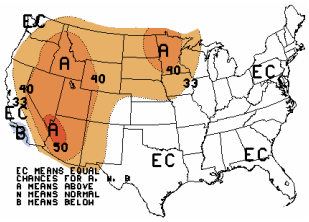

Figure 7– MAM Temperature Outlook.

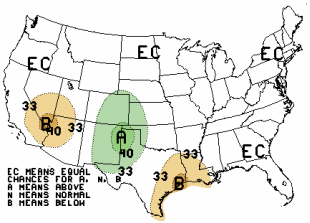

Figure 8 – MAM Precipitation Outlook.

Additional Information

NOAA CPC ENSO Page:
http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml

NOAA El Niño Page:
http://www.elnino.noaa.gov

NOAA CPC Outlooks:
http://www.cpc.ncep.noaa.gov/products/predictions/30day/

Local Three Month Temperature Outlook:
http://www.weather.gov/climate/l3mto.php

Note: At this time, no further El Nino Fact Sheet updates are planned. Please refer to the links provided above for updated information.